



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,176	12/20/2004	Seung-Jae Moon	20010-07USA	5249

7590 02/08/2006
JHK Law
Po Box 1078
La Canada, CA 91012-1078

EXAMINER

BOYKIN, TERRESSA M

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/519,176

Applicant(s)

MOON ET AL.

Examiner

Terressa M. Boykin

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 are rejected under 35 U.S.C. 102(a, b, or e) as being anticipated by US 4943677 (as noted in applicants International Search Report) See cols 1-6, table 1, claims 1,2,,3,4,9, and 11.

US 4943677 discloses a poly(alkylene carbonates) of controlled molecular weight are made by copolymerizing carbon dioxide and one or more oxirane compounds using zinc polycarboxylate catalyst in the presence of a sterically hindered organic proton donor. The acidity of the donor is in the range of 3 to 20 pKa and the steric quality of the donor is such that it has a steric parameter (Es) of -0.38 or less. The molecular weight of the polymer can be regulated by altering the level of proton donor over a range which does not adversely affect catalyst productivity. Benzoic acid and phenol are examples of suitable proton donors. The preferred catalyst is one made from zinc oxide and a dicarboxylic acid, such as glutaric acid or adipic acid.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4943677 See cols 1-6, table 1, claims 1,2, 3,4,9, and 11. in view of Li-Chen et al. pages 253-260 (as noted in applicants' provided International Search Report)

US 4943677 discloses a poly(alkylene carbonates) of controlled molecular weight are made by copolymerizing carbon dioxide and one or more oxirane compounds using zinc polycarboxylate catalyst in the presence of a sterically hindered organic proton donor. The acidity of the donor is in the range of 3 to 20 pKa and the steric quality of the donor is such that it has a steric parameter (Es) of -0.38 or less. The molecular weight of the polymer can be regulated by altering the level of proton donor over a range which does not adversely affect catalyst productivity. Benzoic acid and phenol are examples of suitable proton donors. The preferred catalyst is one made from zinc oxide and a dicarboxylic acid, such as glutaric acid or adipic acid.

Note that the reference discloses each moiety as claimed except for the templating agent. However, Li-Chen et al. discloses the copolymerization of carbon dioxide and propylene oxide with a zinc catalyst supported on a carboxyl containing polymers. The

Art Unit: 1711

templating agent of claim 1 is a nonionic surfactant which is an amphiphilic block copolymer as in claim 1. Claims 9 and 10 are also directed to organic aliphatic or aromatic dicarboxylic acid. The reference discloses that the zinc precursor may be zinc acetate or zinc oxide. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teaching of Li-Chen et al. in that of USP 49436677 for the purpose of improving the characteristics of the copolymer made therefrom.

Consequently, the claimed invention cannot be deemed as unobvious and accordingly is unpatentable.

Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is (571-272-1700).

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb


Examiner Terressa Boykin